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What is claimed is:

1. An engine cylinder piston-connecting rod subassembly for use in an engine comprising:

5 a piston;

a connecting rod having a piston-end portion which is assembled into said piston, said piston-end portion defining a bore for receipt of a piston pin, said connecting rod having a first end and an opposite second end, said bore extending between said first end and said second end, said connecting rod including as part of
10 said bore a first profiled relief portion adjacent said first end and a second profiled relief portion adjacent said second end; and

a piston pin inserted through said bore and into portions of said piston for securing together said piston and said connecting rod.

15 2. The engine cylinder piston-connecting rod subassembly of claim 1 wherein said first profiled relief portion and said second profiled relief portion each have a curved surface.

3. The engine cylinder piston-connecting rod subassembly of claim 2
20 wherein a surface coating is applied to said bore.

4. The engine cylinder piston-connecting rod subassembly of claim 1 wherein said first profiled relief portion and said second profiled relief portion are each shaped with a plurality of end-to-end frustoconical sections.

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5. The engine cylinder piston-connecting rod subassembly of claim 4 wherein a surface coating is applied to said bore.

6. A connecting rod for use in an engine cylinder piston-connecting rod
30 subassembly and for receipt of a cylindrical piston pin as part of said subassembly, said connecting rod comprising:

a main body portion defining a bore for receipt of a piston pin, said main body portion having a first end and opposite thereto a second end, said bore extending between said first end and said second end;

35 a first shaped relief portion adjacent said first end, said first shaped relief portion being defined by said main body portion and comprising a portion of said bore; and

a second shaped relief portion adjacent said second end, said second shaped relief portion being defined by said main body portion and comprising a portion of said bore.

5 7. The connecting rod of claim 6 wherein said first shaped relief portion and said second shaped relief portion each have a curved surface.

 8. The connecting rod of claim 7 wherein a surface coating is applied to said bore.
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 9. The connecting rod of claim 6 wherein said first profiled relief portion and said second profiled relief portion are each shaped with a plurality of end-to-end frustoconical sections.

15 10. The connecting rod of clam 9 wherein a surface coating is applied to said bore.

AMENDED CLAIMS

[received by the International Bureau on 29 May 2000 (29.05.00);
new claims 11-25 added; remaining claims unchanged (3 pages)]

a second shaped relief portion adjacent said second end, said second shaped relief portion being defined by said main body portion and comprising a portion of said bore.

5 7. The connecting rod of claim 6 wherein said first shaped relief portion and said second shaped relief portion each have a curved surface.

8. The connecting rod of claim 7 wherein a surface coating is applied to said bore.

10 9. The connecting rod of claim 6 wherein said first profiled relief portion and said second profiled relief portion are each shaped with a plurality of end-to-end frustoconical sections.

10. The connecting rod of claim 9 wherein a surface coating is applied to said bore.

15 11. An engine cylinder piston-connecting rod subassembly for use in an engine comprising:
a piston;
a connecting rod having a piston-end portion which is assembled into said piston, said piston-end portion defining a bushing bore;
a connecting rod bushing having oppositely disposed ends and being assembled into said bushing bore, said connecting rod bushing defining a profiled pin bore
20 which is shaped with a relief portion adjacent each end; and
a piston pin inserted through said profiled pin bore and into portions of said piston for securing together said piston and said connecting rod.

25 12. The engine cylinder piston-connecting rod subassembly of claim 11 wherein said connecting rod bushing has a longitudinal centerline and the ends are angled relative to said longitudinal centerline.

13. The engine cylinder piston-connecting rod subassembly of claim 12 wherein said connecting rod bushing is fabricated out of a steel-backed base metal having a composition by weight of 80% Cu, 10% Sn, and 10% Pb.

14. The engine cylinder piston-connecting rod subassembly of claim 13 wherein each relief portion is angled and machined to an angle of between 12 minutes and 32 minutes relative to said bushing bore.

5 15. The engine cylinder piston-connecting rod subassembly of claim 14 wherein each angled relief portion is shaped so as to correspond to the shape of the portion of the piston pin adjacent to the corresponding angled relief portion when the piston pin is under load during normal engine operation.

10 16. The engine cylinder piston-connecting rod subassembly of claim 11 wherein said connecting rod bushing is fabricated out of a steel-backed base metal having a composition by weight of 80% Cu, 10% Sn, and 10% Pb.

17. The engine cylinder piston-connecting rod subassembly of claim 11 wherein each relief portion is angled and machined to an angle of between 12 minutes and 32 minutes relative to said bushing bore.

15 18. The engine cylinder piston-connecting rod subassembly of claim 11 wherein each relief portion is shaped so as to correspond to the shape of the portion of the piston pin adjacent to the corresponding relief portion when the piston pin is under load during normal engine operation.

20 19. The engine cylinder piston-connecting rod subassembly of claim 18 wherein said connecting rod bushing is fabricated out of a steel-backed base metal having a composition by weight of 80% Cu, 10% Sn, and 10% Pb.

20. A connecting rod bushing for use in an engine cylinder piston-connecting rod subassembly and for receipt of a cylindrical piston pin as part of said subassembly, said connecting rod bushing comprising:

25 a substantially cylindrical outer surface, an inner surface, a profiled pin bore with a longitudinal centerline, oppositely disposed ends which are angled relative to said longitudinal centerline and converging in a first direction;

a first shaped relief portion adjacent a first end, said first shaped relief portion being defined by said inner surface and comprising a portion of the profiled pin bore; and

a second shaped relief portion adjacent the other end, said second shaped relief portion being defined by said inner surface and comprising a portion of the profiled pin bore.

5 21. The connecting rod bushing of claim 20 wherein said connecting rod bushing is fabricated out of a steel-backed base metal having a composition by weight of 80% Cu, 10% Sn, and 10% Pb.

 22. The connecting rod bushing of claim 21 wherein each shaped relief portion is machined to an angle of between 12 minutes and 32 minutes relative to said bushing bore.

10 23. The connecting rod bushing of claim 22 wherein each shaped relief portion is configured so as to correspond to the shape of the portion of the piston pin adjacent to the corresponding shaped relief portion when the piston pin is under load during normal engine operation.

 24. The connecting rod bushing of claim 20 wherein each shaped relief portion is machined to an angle of between 12 minutes and 32 minutes relative to said bushing bore.

 25. The connecting rod bushing of claim 20 wherein each shaped relief portion is configured so as to correspond to the shape of the portion of the piston pin adjacent to the corresponding shaped relief portion when the piston pin is under load
20 during normal engine operation.